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A
DISCOURSE
Concerning the
CAUSES and EFFECTS
OF
CORPULENCY:
Together with the
Method for its Prevention and Cure.

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LONDON:
Printed for J. ROBERTS, near the *Oxford* Arms in *Warwick* Lane. M.DCC.XXVII.

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THE

PREFACE.

AS Cuſtom has made it almoſt neceſſary for Authors to introduce their Works with ſomewhat by way of Preface, I ſhall, in Compliance therewith, give ſome Account of the Reaſons for publiſhing this Treatiſe.

1. The great Deſire and Inclination which too many diſcover, to attain to a corpulent Habit of Body, tho by Intemperance

and Exceſs, from a Notion there is ſomewhat of Modiſhneſs or Pleaſure in it, and that it challenges Reſpect from others; little conſidering the Danger they run, in procuring ſuch a Habit, or the many Inconveniences that attend it.

2. The Affectation and Pleaſure which grown People have, in promoting and continuing this troubleſome, unhealthy, and generally unactive Habit of Body: Their Satisfaction with it is expreſſed by their Unwillingneſs to uſe ſuch Methods as may reduce them gradually and ſafely, to an eaſier and healthier State; nay, on the contrary, they indulge themſelves in thoſe very Meaſures, which at firſt deprived them of a lively active Temperament of Body.

3. The chief Deſign therefore of this Treatiſe is to direct ſuch as deſire and value Health and long Life, how they may avoid the Means which occaſion ſuch an undeſirable Load of uſeleſs and pernicious Matter; which, beſides its Troubleſomneſs, Liableneſs to Diſeaſes, and Tendency to ſhorten Life, can ſcarcely ſometimes be kept from Putrefaction, even while the Soul continues an Inhabitant in this clayie Cottage. And,

4. I will ſhew the many Advantages which a thin or middling Habit of Body is intitled to, and enjoys frequently beyond thoſe who are corpulent.

The whole is ſhort and plain, and contains ſeveral Things worthy of Obſervation. The Benefit of the ſober and conſiderate Part of Mankind is what I chiefly intend, and ſhall always have in View, before any private or mean Deſigns.

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'TIS a juſt Obſervation of the learned *Boerhaave*, that *whoever can exerciſe the proper Actions of Life, with Eaſe, Pleaſure, and ſome Certainty of Time, may well be eſteemed to have a ſound and healthy Body.* And 'tis this State and Condition only that truly deſerves the Name of Health; for if theſe Things cannot be done, or are attempted with

Trouble, Pain, and Uneaſineſs, the Perſon cannot be ſaid to be in a State of Health, but in a morbid State, or under ſome Diſeaſe. And, ſince the greateſt Part of corpulent People are incapable of much Action or Motion, without Trouble or Uneaſineſs, they may be truly ſaid to be in a morbid State: The Occaſion and Effects whereof ſhall be the Subject of our preſent Enquiry, and I ſhall account for the laſt from mechanical Principles: Which I ſhall endeavour to do in the following Method, *viz.*

I. I ſhall enquire what are the Cauſes of Corpulency in a human Body.

II. I ſhall ſhew briefly how the Fat is ſeparated from the Blood.

III. Aſſign the ſeveral Services or Uſes of Fat in an animal Body.

IV. I ſhall ſhew why ſome Conſtitutions are more ſuſceptible of Fat than others.

V. I ſhall diſcover ſome of the Inconveniencies which corpulent People are more liable to than others.

VI. Laſtly, I ſhall point out the Means which may be ſafely uſed, to reduce an overgrown Habit to a livelier and better State of Health.

CHAP. I.

Of the Cauſes of Corpulency.

BY *Corpulency* I mean that groſs Habit of Body which increaſes to ſuch a prodigious Bulk, as either to hinder, prejudice, or render the Performance of the Actions of Life uneaſy or painful; ſeveral Inſtances whereof we have in Hiſtory, ſuch as that of *Nicomachus Smyrnæus*, whoſe Body, *Galen* ſays, grew to ſuch a monſtrous Bulk, that it could not be moved out of the Place it was ſet or laid in. And *Sennertus* ſaw a Man who weighed 400 *lib.* Weight, and a Woman who weighed 420 *lib.* Nay, I my ſelf ſaw a young Lady, who died of Corpulency in the 25th Year of her Age, who weighed above 500 *lib.* ſhe was a Monſter in Nature for Bulk; and the moſt corpulent Man I ever did ſee, was to her as a Man of a middle Habit is to one exhauſted by an Atrophy. I believe no Age did ever afford more Inſtances of Corpulency than our own.

The immediate Cauſe of this Habit of Body is a great Plenty of Blood, ſtor'd with oily Parts, and not ſufficiently attenuated and diſcharged by Perſpiration; but as there is daily an Addition made to the Blood, ſo its oily Part is conſtantly ſtraining off, and is depoſited in its proper Receptacles.

But there are ſeveral remote Cauſes, which promote this plentiful Secretion of oily Parts from the Blood: And 1. I ſhall ſpeak of Air, which may promote Fatneſs ſeveral Ways. (1.) A warm and foggy Air, by the Diminution of its Elaſticity, will impair the neceſſary and regular Perſpiration of the Body, becauſe its Particles mixed with the Blood cannot fully elevate and defend its Globules; but they run into cloſer Contacts, and cauſe greater and ſtronger Coheſions, than are conſiſtent with the healthy State of the Fluid, or agreeable to the Purpoſes 'tis deſigned for: ſo that it becomes ſiery, ry, and indiſpoſed for paſſing off by the Pores of the Skin. The Moiſture of the Air at the ſame Time inſinuates it ſelf thro' the ſmall Orifices of the Skin, mixes with the Blood, and increaſes its Quantity, fills the Pores, and obſtructs them againſt the Force of their perſpirable Matter: It relaxes the Fibres of the Body, diminiſhes the Contractility of the Veſſels, renders them incapable to maintain the Circulation, with Force ſufficient to break its Way thro' theſe Obſtructions. But,

(2.) Corpulency may be promoted, not only by a foggy Air, but by the conſtant Air of wet, flat, and marſhy Countries, as *Holland*, ſome Parts of *Lincolnſhire*, *Eſſex*, and *Cambridgſhire*, where the Air is filled with Moiſture conſtantly exhaling from the Earth; which diminiſhes its Elaſticity, and cauſes it to have the ſame Effects on the Body as a foggy Air, the Blood not being prepared for the neceſſary Secretions and Evacuations: Hence it lines the Inſides of the capillary Arteries, and Orifices of the Glands with a ſlimy Lentor, which increaſes the

Body's Bulk and Inactivity, relaxes the Fibres ſtill more, and induces (if not a Corpulency) a Leucophlegmacy ; or, as the ſlow Motion of the Blood gives Opportunity of a greater Attraction to its different Particles, ſo ſometimes its oily Parts will come to a cloſer Contact with one another, and be ſtrained off in a larger Quantity, and laid up in the *Veſiculæ Adipoſæ*, whereby the Fat and Bulk of the Body are increaſed.

(3.) A City Air, for the ſame Reaſon, generally promotes Corpulency more than a clear, freſh, and ſharp Country Air, becauſe the Heat, and many different Exhalations in a City load and weaken the Spring and Motion of the Air, ſo that it has not that Force upon the Blood in the Lungs, to break and divide it ; or, rather, the Diminution of the Air's Elaſticity makes it incapable of that due Rarefaction and Expanſion, when drawn into the Lungs, ſo as to blow up the Air-Veſſels there.

(4.) Some Seaſons of the Year contribute more to the Increaſe of the Body's Bulk than others, as in the Winter ;

which is partly occaſioned from the Moiſture of the Air, and its Effects, and partly from want of Exerciſe, and lying long in Bed.

(5.) The Inhabitants of woodland Countries, by reaſon of the Air's being filled with Moiſture and *Effluvia*, may ſometimes be more diſpoſed to Corpulency, than thoſe of an open dry Country; becauſe theſe great Thickets overſhadow the Earth, keep off the Rays and Warmth of the Sun from it, which ſhould warm and dilate its Surface and Pores, by rarifying its contain'd Air, and ſo procuring an eaſier Penetration for the Rain when it falls down: By which Means the Surface of the Earth in ſuch Places will be moiſter than in other Parts, where the Sun has an open and free Acceſs, and ſo can diſplay his Force. Theſe Thickets alſo occaſion a prodigious Quantity of watry and oily Particles, to be abſorb'd by the Roots of theſe Trees, and emitted into the Trunks, Branches, Twigs, and Leaves; which muſt afford a vaſt Exhalation of Moiſture from the innumerable Branches and Leaves in thick and large

Foreſts. This muſt load the Air with Moiſture, as the firſt Colonies of *America* felt to their Loſs and Sorrow, before they had cut down a great Part of the Woods, and cultivated the Land, whereby the Air became more ſerene and dry, and the Country inhabitable by the *Europeans*. Dr. *Woodward* in his *Obſervations on Vegetation*, tells us, that the Moiſture and Exhalation is very great in *America*, where he found, that thriving Plants expended ſo much Water, that in ſome the Expence of the Water was to the Growth of the Plant as 700 to 1; while the Water in a Glaſs that had no Plant to nouriſh, continued the ſame at the End of the Experiment, that it was at the Beginning. The languiſhing and decaying of the Leaves of Trees by the Heat of the Sun in the Day-time, is another Argument to prove the vaſt Exhalation wherewith the Air is filled; for by the Heat of the Sun, or even the Rarefaction of the Air by Light, the Tracheal or Aerial Veſſels of Vegetables have their contain'd Air rarified and expanded to an Æquilibrium, with the external Atmoſphere;

phere; which Expanſion of the Air in the Aerial Veſſels, compreſſes the Veſſels containing the Liquid, that is abſorb'd from the Earth, for the Nouriſhment of the Plant; and this Compreſſion ſtraitens the Veſſels containing the Liquid, and propels their Liquid perpetually all Day; and this propels on, the Waſte of the Liquor being always in proportion to the Heat cauſing the Rarefaction of the Air; For if the Day be very warm, the Expence is ſo great, that the Leaves languiſh, hang down, and ſeem to wither, till the Night return; and then the Tracheal Veſſels are contracted, and the Veſſels containing the Liquid are relaxed and expanded; then the Tree as it were eats and drinks all the Night, till it is ſufficiently nouriſhed again, and has recovered the Day's Waſte; next Morning its Leaves are freſh and green, and the Veſſels that contain the Liquid are trigg'd and full, and their drooping Heads raiſed up: So that the Day waſtes, and the Night nouriſhes Vegetable as well as Animal Bodies. Thus we ſee that a moiſt and foggy Air, eſpecially if Warmth be joined with it, cauſes either a larger Secretion of Oil from the Blood, and laying it up in the *Veſiculæ Adipoſæ*, or occaſions the depoſiting of a ſlimy *Lentor* on the Inſides of the Veſſels, and ſo a Leucophlegmacy; both which increaſe Corpulency, but chiefly the laſt.

2. Plenty of Eatables and Drinkables, of a ſoft, ſmooth, balſamick Nature, (free from ſuch ſharp, auſtere Particles, as abrade, cut or tear in their Paſſage the Coats of the ſmall Veſſels) which cauſe no uneaſy or painful Senſation in any Part of the Body, ſo as to diſturb Secretion and Reſt, do greatly promote Corpulency. The Meats which I ſeem more particularly adapted to this Purpoſe, are, (1.) Sweet, fat, or oily Things, which nouriſh much, and quickly lay in large Store into Veſicles or the ſmall Bladders, prepared for the receiving and containing of Oil, their Subſtance being very ſimilar to theſe Parts of our Bodies. *Galen* ſays, *Sweets are the Baſis of all Nouriſhers*: But this does not hold in bilious Conſtitutions; for in ſuch, Sugar, Honey, &c. eaſily

ly change into Bile; juſt as bitter, acrid, ſharp, and auſtere Things are not only unpleaſant to the Taſte, and ungrateful to Nature, but promote the extenuating and depauperating of the Body.

(2.) Such Kind of Food as is eaſily and readily aſſimilated into the Nature of animal Fluids; as in nutritious Floods of eaſy Digeſtion.

(3.) Thoſe Things, which tho they ſit eaſy upon the Stomach, and go ſoon off, yet are of ſuch a tenacious Nature, that they cannot be ſo quickly attenuated, and ground down into ſuch minute Parts, as can readily enter the ſecretory Veſſels, and be eliminated and expelled the Body, *viz.* Eggs, Rice-Milk, all Shell-fiſh, as Oyſters, Crabs, *&c.*

(4.) All fatulent and mucilaginous Eatables, as Peaſe, Beans, Artichokes, and all viſcid Proviſions.

This is the *Criterion* of wholeſom Food, that it be of that friendly and ſimilar Nature, that, when digeſted, and arrived at the Parts it ſhould nouriſh, it occaſions no Uneaſineſs or Diſturbance, but is readily applied and aſſimilated to the Parts without diſturbing the Balance of Nature, and Functions of Life and Health.

Soft, ſmooth Drinkables are ſuch as are not clogg'd with acid, acrimonious, ſaline or tartarous Parts, *viz.* Milk and Water, Milk by it ſelf, eſpecially of Aſſes, ſoft, mild Malt Liquors, Mountain, Tent, and Malaga Wines, either drank alone, or with Water.

3. A moderate even Digeſtion of theſe ſorts of Food is no leſs neceſſary; for, if it be too quick, the Food is hurried out of the Body by ſome Evacuations, before its nutritious Parts be ſeparated, and applied to their proper Places; whereby the Body will be ſo far from turning corpulent, that it muſt decay and languiſh; or, if the Digeſtion be weak and ſlow, the Food affords not ſufficient Reparation in Proportion to the Body's Waſte, from its ſeveral Diſcharges, and conſtant Loſs of Subſtance; therefore it muſt waſte, and not grow fatter.

4. 'Tis neceſſary, that the Ventricle or Stomach be free from ſharp, ſour, and acrimonious Humours, whether they be diſ-

charged into it from the Mouths of its ſecerning Tubes or Glands, or pump'd up from the Guts, Liver, and Sweet-Bread; for theſe vitiate the Chyle, communicate the ſame Taint to the Blood, ſtimulate the Solids, contract the nervous Fibres, and often cauſe uneaſy and painful Senſations.

5. 'Tis requiſite that the Inſides of the Inteſtines be clean, not furred up with viſcid Slime, or ropy adherent Matter filling their Valves; which either hinders the Filtration of the Chyle, or cloys the Mouths of the Lacteals. And where the inteſtinal Tubes are thus inactive, the Chyle ſent into the Body will be indigeſted and unprepared, leave a ſlimy Lentor on the Inſides of the capillary Arteries, and produce a Leucophlegmacy, without due and timely Care to prevent it.

6. The Blood it ſelf muſt be in a healthy Condition, not filled with Salts; for theſe by their Solidity wear and tear the Veſſels as they paſs along, and by their Pungency contract the Veſſels and Fibres; nor muſt the Blood be very viſcid, and

abounding with preternatural Coheſions, for theſe prevent its free and plentiful Acceſs into the delicate Capillaries, which run upon the *Membrana Adipoſa*; or, if it gets in, 'tis in Danger of occaſioning Obſtructions and Diſeaſes.

7. There muſt be no conſtant or frequent exceſſive Evacuations; for theſe haſten the Fluids out of the Body, before the Secretions be finiſhed, or the nutritious Parts be applied and aſſimilated to the Sides of the Veſſels for their Nouriſhment or Growth; therefore all great and frequent Hæmorhages of the Blood, great Looſeneſs, Diabetes, profuſe Sweating, or immoderate Perſpiration, are all combined Enemies to Corpulency.

8. Gentle and eaſy Exercise of the Body cauſes a due Circulation of the Blood, from the larger and leſſer to the moſt minute Veſſels over the whole Body, without much Diſſipation of its Parts; preſerves ſome Degree of Strength in the Solids, and Elaſticity of their Fibres, whereby the Blood is more broke down and better mixed; the oily Part comes the eaſier to the Mouths of its

recipient Veſſels, and the Body is capable of receiving Addition from each Aſſumption of Food; its Habit is increaſed and not diminiſhed by good Blood being ſent out (for Plenty thereof cauſes a Corpulency) into the moſt minute diſtant Receſſes; 'tis corroborated and ſtrengthened, and the hurtful Attrition and Exhalation of its Parts are prevented as much as poſſible. Now tho this gentle Exerciſe promotes a Corpulency, not accompanied with ſuch ſenſible and manifeſt Inconveniencies, yet a total Remiſſion of uſual and neceſſary Exerciſe is a more effectual Cauſe of a morbid Corpulency; for by Sloth and Idleneſs the natural and neceſſary Evacuations, eſpecially by Perſpiration, are ~~diminiſ~~h'd, the Veſſels are diſtended with Fluids, and this Diſtenſion ſpoils or impairs the Stiffneſs and Vigour of the Solids, which is what keeps every Animal from a natural paralytick State. The Infant has its Struggles and Motions in the Womb, and after its Birth, the Nurſe takes Care to accuſtom it firſt to ſit in an erect Poſture; then, as its Fibres become ſtronger,

ger, to ſtand; and, at length, to walk and run. Theſe Motions invigorate its Solids, give them a proper Tone, and preſerves the Creature from a perpetual Deprivation of the Uſe of its Limbs, prepare the Nerves for an eaſier and fuller Reception of animal Spirits, give them a greater Elaſticity, make them healthy, and fit for the neceſſary Fatigues of Buſineſs and Life; and, till Children are able to go, the Agitation in the Cradle very much ſupplies the Want of Exerciſe; for in Adults, when Exerciſe is remitted long, the Muſcles ceaſe to play ſufficiently, and to act upon the Blood, ſo as to prevent a Lintor; hence it becomes ſiezy, or its oily Parts attract one another. Heat is alſo the Effect of Exerciſe, for it proceeds from an accelerated Motion of the Blood, which is the Product of an increaſed or exerted Vigour of the Solids, which briskly act upon the Fluids. When this Vigour is weakened by Idleneſs, a Diſtenſion or Plethora on the Veſſels enſues, even to the benumming of the Parts, whereby the Evacuations are diminiſhed, and the Fluids daily get Ground of the Solids, till a Leucophlegmacy comes on, which is the worſt Sort of Corpulency, and is only the Beginning of an univerſal Dropſy.

9. Serenity of Mind muſt accompany all theſe; the Paſſions muſt be duly regulated, which are of two Sorts, elevating or depreſſing; the laſt are quite oppoſite both to Health and Corpulenlency; but the firſt, *viz.* Love without Fear, Hope without Deſpair, and Joy if moderate, cauſe a free, ſweet, and pleaſant Circulation of the Blood, and a proper Attenuation and Mixture of all its Parts, fit the Blood for Secretion by the lateral adipoſe Veſicles joined to the capillary Arteries. A chearful Temper contributes much to fatten the Body; for by Laughter, the Action, or ſmall Convulſion, of the Muſcles of the Belly, the Breaſt, Neck and Face, ſqueeze out the ſoft, ſlippery and oily Particles from the Blood in the ſmall evaneſcent Arteries, and drives them into theſe ſmall Arteries in active adipoſe Bladders there to be ſtor'd up. Hence the Proverb *laugh and be fat*, is not without its Reaſon and Philoſophy.

But, if any of theſe Paſſions, Love, Joy, or Laughter (which is a Convulſion) exceed their juſt Bounds and due Moderation, they cauſe a Contraction of the Fibres, turn the Fluids into violent Motion, and cauſe a violent Evacuation by Sweat, Urine, Stool, and inſenſible Perſpiration: But if Laughter be continued to a great Exceſs, it winds up the Spring of the Fibres ſtill higher, and throws them into a violent Convulſion; for not only are the Evacuations ſtopt, but alſo the Circulation it ſelf in theſe Parts; and, without ſudden Remiſſion, Life it ſelf is in the utmoſt Hazard: And this is the Reaſon why People may be tickled, and laugh themſelves to Death.

10. Frequent tippling and drinking ſoft Wines, or mild Malt Liquors, greatly encourage or increaſe Corpulency, by filling and dilating the Tubes of the animal Body, and affording Plenty of Oil to diſtend the membranous Lobules: Hence Alehouſe-keepers and Pot-Companions are generally of pretty bulky Bodies.

11. Lying ſoft and warm ſoftens and relaxes the Fibres, and prepares the Veſ-

ſels for the Reception of the full Strength of the Blood.

12. By frequent, long, and ſound Sleep, the Body is plentifully moiſtened; all the nutritious Parts of the Body being turned into good Chyle, and the Chyle into Blood, which, circulating ſtrongly, equally, and ſlowly, penetrates all the Parts of the Body, enters the ſmalleſt Veſſels, and affords the largeſt Secretion: But if Sleep be too long, the Parts become ſo relaxed, that, at laſt, they wholly loſe their Tone, ſtand ſtill, and the Perſon dies. If Sleep be too ſhort, the begun Digeſtion is interrupted, Secretion hinder'd, and due Nutrition prevented.

13. Exceſſive Venery breaks the Conſtitution, deſtroys the Elaſticity of the Solids, and waſtes the whole Body; but moderate Venery promotes Corpulency, after the ſame manner as gentle Exerciſe, and moderate Laughter.

I might laſtly add Indolency of Mind, as a Promoter of Corpulency, but I need not enlarge on it.

CHAP. II.

How the Fat is ſeparated from the Blood.

THE next Thing propoſed, was briefly to enquire, How the Fat is ſeparated from the Blood. 'Tis by the Diſtribution of innumerable capillary Arteries, which in all Parts of the Body, in ſome ſort, cover the Cells of the Adipoſe Membranes, wherever they are to be found. Theſe Arteries are diſplay'd with a kind of Network, till they terminate in Veins, which in like Manner abound in theſe Membranes. Theſe Capillaries, by the Help of lateral Emiſſaries betwixt the fatty Veſicles, ſeparate a thin, fine Oil from the Blood, which is depoſited into the Adipoſe Veſicles; and this Diſpoſition requires no other Condition, but an eaſy and ready Admiſſion into the ſundry Veſicles, *more cribrationis*, or by whatſoever Name or Mechaniſm others pleaſe to explain Glandular Secretion.

That the Fat is in the Blood is proved from this Obſervation: In diſſecting dead Bodies, ſome have obſerved many ſmall ſhining Drops of Oil on the Surface of the Blood guſhing out of a cut Veſſel. The whole of the *Membranæ Adipoſæ* conſiſts of ſmall Bags, like to the Balls whereof the conglomerated Glands are compoſed; theſe little Bags are filled with pinguiferous Globules, to which the ſanguiferous Veſſels come and are contiguous; which Structure we have much more eaſily and plainly diſcovered in Tumours and Excreſcencies of the fatty Membrane, which ſeem to owe their Origin to a Laxneſs of theſe little Bags, or to ſome Compreſſion or Obſtruction of the returning Veſſels. We need not queſtion but the Fat is brought into the Veſicles by the Arteries; for theſe *ſacculi* have been found, not only in young but adult Animals, full of Blood with Fat, but more frequently and eſpecially in hydropick Bodies, which have been obſerved full of bloody Serum mixed with Oil or Fat, reſembling Fleſh in the firſt, and Jelly in the laſt: And probably the Fat is again returned from theſe little Bags by the Veins wherefore 'tis not incredible, that beſides the Blood, Lymph, and Spirits, the Fat alſo has its own Circulation: But what the Veſſels are in which it moves its Round, I refer the Reader to conſult *Malpighius*, *Magnetus*, and *Morgagnius*; the laſt of theſe Writers, with very good Reaſon, thinks them no other than the Veins; for proper Veſſels ſeem not neceſſary ſeeing whatever can be aſcribed to them, may be explained by the ſanguiferous Veſſels: For 'tis granted that the Arteries communicate with the *Cellulæ Adipoſæ*; and *Malpighius* plainly ſhews the Communication of theſe *Cellulæ* with the Veins, when he teſtifies, that both in Frogs and other Animals, having compreſſed them particularly from the *Striis Adipoſis* to the Trunk of the *Vena Porta*, he ſaw real ſmall Drops of Oil carried with the Blood in the ſame Veins to the Cavity of the Liver. But as ſuch Obſervations ſeem to prove the Return of the Fat into the Veins in general, and into that of the *Porta* in particular, ſo they confirm that Uſe of the Caul propoſed by the learned Dr. *Boerhaave*, *viz.* Seaſonably to provide with many oily Particles the Blood that goes to the Liver for the Separation of the Bile. And, if we admit this to be the Uſe of the Caul, we may ſafely add this, *viz.* to mix with the Blood aſcending by the Meſeraick Veins from the Inteſtines to the Liver, many of theſe oleaginous Particles, wherewith 'tis filled out of the *Cellulæ Adipoſæ* for the ſame End. The Caul likewiſe has this Uſe, to keep up the Lubricity or Slipperyneſs of the Guts, and facilitate their periſtaltick Motion.

The Guts from their Vicinity to the Caul may have ſome of their contained Acrimony obtunded, which otherwiſe might occaſion Pain, Uneaſineſs, or Inflammations; ſo that the commonly aſſigned Uſe of the Caul muſt either be wholly falſe, or at beſt only ſecondary, *viz.* to preſerve the Warmth of the Stomach and Guts, and ſo promote Digeſtion: For if this be true, ſuch as have the ſmal-

leſt

eſt and pooreſt Caul, would have the weakeſt and leaſt Digeſtion.

CHAP. III.

Of the Uſes of the Fat.

TO ſhew the Uſes of the Fat in a Human or Animal Body, was the third Thing I propoſed to do.

1. *Bartholine* and *Schenckius* ſay, that hereby Softneſs and Agility are preſerv'd in the Muſcular Parts, *viz.* by the Fibres being anointed with Oil, eſpecially the Skin, which clothes the Adipoſe Membrane; otherwiſe the Force of the Atmoſphere, Heat of the Air, *&c.* might be ready to parch and diſcolour it.

2. They ſay, that in Time of Want or Famine the Fat returns into the Blood, and ſerves for the Nouriſhment of the Body. I am ſatisfied that this is true, both from ſome Sheep I have ſeen, which lay hid under a great Heap of Snow for thirty Days, and came out after the

Thaw, ſcarce able to ſtep, yet they recovered and did well; and alſo from ſome Men working in Lead Mines; where the Shaft fell upon them, and continued ſo five Days, till the People clearing the Shaft again to get down to the Mines, when they came to the Bottom, to their great Surprize they found theſe Men alive who had been ſhut up, and who recovered and did well.

But let us conſider how in ſuch an extraordinary Caſe the Fat returns into the Blood, and ſerves for Nouriſhment.

(1.) This is by its ſheathing up, or blunting the Salts of the Blood, and thereby obtunding its Acrimony; and by preventing the ſaline ſharp Particles from impairing and abrading the ſmall capillary Veſſels.

(2.) By ſhutting up or ſtraitning the Pores of the Skin, from its groſs unctuous Parts getting into theſe Glands and ſecretory Ducts, where they ſtick and ſtraiten the Canal, and retard the ſudden Diſſipation of the Body's ſmall Moiſture; the Coats of the Veſſels over the Body being not a little ſtraitned or contracted, the Fibres of the conſtituting Membranes come cloſer to one another, make the Coats denſer and more compacted, whereby the Fluids find a great Difficulty to make their Eſcape.

But the Reaſon why we may ſuppoſe the Fat returns from its Veſicles into the Blood, and mixes again with it, is, becauſe the Fluids of the human Body at ſuch a time wanting Supply, ſtill diminiſh the Solids, which likewiſe are not provided with ſufficient Nouriſhment; they ſhrink, empty gradually upon every Circulation, and contract by Degrees; the Diameters of their Cavities ſhorten, the Lobules containing the Fat collapſe, and are likewiſe compreſſed by the ſhrinking of the circumjacent Solids; and the Oppoſition of the Blood in the Veſſels not being ſo ſtrong, the oily Particles are again thrown back into the capillary Veins, which are not only contiguous, but continuous to the membranous Cells; at the ſame Time the Preſſure of the Atmoſphere contributes its Aſſiſtance, by compreſſing with its Weight the Body's whole Surface,

face, and promoting the Contraction of the Solids.

3. The ſubcutaneous Fat is a Defence to our Bodies from the Injuries of Weather, whether hot or cold, by preventing in the firſt a ſudden and exceſſive Diſſipation of the Parts of the Body by too large a Tranſpiration: And in Cold 'tis a Medium between the Muſcles and it; for the chill Air might cauſe a too great Criſpation of the Fibres, lean Perſons being often liable to Shiverings in very cold Weather.

4. Fat not only lubricates the Solids, but facilitates ſome neceſſary Secretions, by preventing too great a Rigidity in a cold Seaſon.

5. It mollifies and relaxes the Fibres, and promotes the Dilatability of the Parts.

6. It beautifies the Body, by hiding the gaping Interſtices of the Muſcles, which would make the Body appear leſs agreeable and beautiful.

7. 'Tis inſtead of a Pillow for ſome Parts of the Body to reſt upon, leſt the Preſſure of the Parts againſt external ſo-

lid Bodies, might retard the Circulation of the Blood in the Capillaries, or contuſe or benum the Nerves. Thus 'tis of ſpecial ſervice in the Soles of the Feet, Palms of the Hands, and Hips.

8. Fat aſſiſts in the Support of the intercurrent Veſſels in its Membrane from the Muſcles to the Skin, and back from that to the Body.

9. When the Blood is full of Salt and acrimonious Particles, 'tis unfit for the Nouriſhment of the Parts without a Mixture of Fat, to ſheath their ſharp Points and Angles.

Notwithſtanding all theſe good Services we reap from the Fat, yet 'tis only to be underſtood when its Quantity is moderate and not exceſſive; for *omne Nimium vertitur in Vitium.*

CHAP. IV.

Why ſome People are more diſpoſed to Corpulency than others.

THE next Thing to be done, was to conſider why ſome Perſons are more ſuſceptible of Fat, and liable to Corpulency than others. The Reaſons whereof I preſume may be,

1. A greater Opportunity and Indulgence of the Cauſes of Corpulency, as Idleneſs, feeding freely on the moſt nutritious and rich Foods, drinking the ſmootheſt and oilyeſt Drinks, lying long a-Bed, and ſleeping much, with all other Things that encourage and invite a Laxneſs, and Dilatability of the Fibres.

2. A natural greater Dilatability of the Fibres in ſome than in others; for ſome Mens Fibres are naturally ſo ſtiff and rigid, that, ſuppoſe all the former Cauſes of Corpulency ſhould concur, yet 'tis impoſſible to alter the State of their Fibres:

bres: Others, on the contrary, have ſuch flexible, lax, and dilatable Fibres, that even Temperance, Exerciſe, Study, Abſtinence, and Abridgment of Reſt and Sleep, cannot prevent Corpulency, altho they eat and drink no more than what is requiſite to anſwer the neceſſary Demands of Life. But ſhould the firſt, by Indulgence of Appetite and Intemperance, affect and ſtrive to obtain a corpulent Habit, they may certainly expect their Wantonneſs to be ſucceeded by a *Plethora*, productive of thoſe Diſeaſes which owe their Riſe to too great a Quantity of Blood in the Body, as a Dilatation of the ſanguiferous and lymphatick Veſſels, an Alteration and Obſtruction of the Secretions, a Compreſſion both of Veins and Lymphaticks, a Stop of the Circulation, inflammatory Fevers, and other Diſeaſes from Inflammations, a breaking and tearing of the Blood-Veſſels, Impoſthumations, Gangrenes, and Death it ſelf. And altho ſuch whoſe Fibres are thus indilatable and ſtiff, are more likely to come to wrinkled Brows, and other Symptoms of old Age than others, yet have they very conſiderable Advantages of ſuch whoſe Fibres are naturally lax and ſoft. But, to explain the Cauſe of this different Tenſion of the Fibres in ſundry People, would oblige me to account for the various Temperaments of Men, which is not my preſent Deſign under this Head.

3. Another Reaſon may be, that People naturally diſpoſed to Corpulency have leſs Evacuation than others, eſpecially by Perſpiration: Thus all Women perſpire leſs than Men, and therefore are more liable to a *Plethora.*

4. The pinguiferous Veſſels or lateral Ducts, going off from the extreme capillary Arteries to the adipoſe Membranes, may be larger in ſome than in others: Hence a greater Secretion of Fat is in the Lobules; for we ſee every Man has ſome Secretion larger than others; therefore the Evacuation of ſecreted Matter from theſe Glands is more liberal: So ſome have wider ſalival Strainers than others, and ſpit more. The venal Glands of others make a more plentiful Secretion of Urine than the Kidneys of

others; and yet perhaps the laſt perſpires more than the former. And this is generally the Caſe of thin, ſlender People, or ſuch as have very plaſtick Fibres, or uſe much Exerciſe; ſome have frequenter Stools than others: And ſo fat People may have larger collateral Veſſels going from the capillary Arteries of the adipoſe Membranes to the oily Veſicles.

CHAP. V.

Of the Inconveniences which corpulent People are more liable to than others.

WE now come to the fifth Thing to be treated of, *viz.* The Inconveniences which corpulent Perſons are ſubject to; but we ſhall firſt ſhew ſome of the Advantages lean People have of the fat and corpulent. And here I do not underſtand by lean People walking Ghoſts, or living Skeletons, who have an Atrophy or *Maraſmus*; but I mean thoſe who have a thin a thin Habit, conſiſtent and accompanied with Health, which has neither ſenſible Superfluity, nor Deficiency of animal Juices. On the contrary, I do not ſpeak of that ſutable and becoming Fatneſs which is attended with Health, Pleaſure, Activity, and Strength: but of that Fatneſs which renders Motion or Action, if continued for a very few Hours, troubleſome, painful and uneaſy, which to others is grateful and delightſome. This is that Corpulency I treat of here, which is undeniably a morbid State.

1. Such lean People can with more Eaſe, Alacrity, and Conſtancy, go thro' the neceſſary or pleaſurable Actions of Life, with unſpeakably leſs Toil, Wearineſs, Trouble, and Fear, than corpulent Perſons are capable of bearing, or dare encounter with.

2. Lean People generally enjoy a far greater Meaſure of Health, if they maintain a moderate and good Uſe of the Nonnaturals; for their Bodies not admitting of much Fat or Corpulency, they are ſecure from ſuch Diſeaſes, as a corpulent Habit of Body expoſes Men to; and

at the ſame time the Bodies of lean People admit of ſufficient Fluids to anſwer all the Demands of Nutrition and animal Spirits.

The Dilatability of the Fibres of corpulent People muſt firſt impair, and, when become exceeding fat, will, in a great meaſure, weaken the Force of the Solids; hence the Evacuations are diminiſhed, the Veſſels are more filled with Fluids, Secretions are interrupted and changed, all the Juices are vitiated, and the Gout, Leucophlegmacy, Dropſies, Lethargies, ſundry Tumours, *&c.* ſupervene; becauſe the Blood not being forcibly enough propelled by the Solids, its Circulation becomes languid, and its ſundry Parts are at liberty to attract one another: Moreover from an unequal and undue Mixture, Concretions muſt happen in ſome Parts, as Polypus's in the Heart and great Veſſels, rending and breaking of the ſmall, ſuch as the Lymphaticks, by their being overfilled with Fluids, and compreſſed without by Fat and other diſtended Veſſels, which ſtraiten their Cavities, ſo that they are unable to reſume their former Elaſticity; whereas the Solids of lean People being more compact, and the Parts of their Fibres, as well as the Fibres themſelves, firmly connected with one another, muſt have and maintain a greater Command over all the Fluids, break and mix them thorowly; whereby the Secretions will be better performed, and the ſeparated Fluids better prepared, and fitter for their Intentions; the nutritious Matter will be fully digeſted, and the Evacuations duly diſcharged, being neither too ſpeedily eliminated, nor too long retained: So that all the Actions of Life, and Secretions of the Body are more duly and better performed in ſlender and healthy Perſons, than in corpulent, even ſuppoſe they may enjoy a ſeemingly healthy State.

3. As ſlender People are generally the more healthy, ſo when they are out of Order, they are frequently eaſier and ſooner reſtored to Health, becauſe their Fluids are ſeldom ſo vitiated, (except from ſome external Cauſe, or ſome great Looſe of Intemperance) and likewiſe becauſe there is no ſuch Repletion in their

Bodies, requiring a long Time to reduce it to a due Standard or natural Quantity; and alſo becauſe their Veſſels and Canals are generally more clear, not having their Inſides furred up with a ſlimy Lentor from a Depreſſion of the Ballance of Nature below the juſt Standard: Or, ſuppoſe, by catching Cold, or the like, their Blood may be ſomewhat viſcid, yet by leſſening its Quantity, and pouring into it diluting Liquours, it may be reſtored without much Danger, Trouble, or Loſs of Time: For the Tone of the Veſſels is eaſily recoverable, and their renewed Vigour mixes all the Fluids, and reſtores their natural and healthy Fluidity.

4. Thin, healthy People may, with more Probability, expect long Life, than they who are groſs and corpulent: For, beſides the former Reaſons, the greater Stretch or Circumference the Blood has to go, the more Strength is undoubtedly neceſſary in the Heart to throw forth its Crimſon Liquor into the great Artery, that it may reach all the Parts of the Body; and the greater Force wherewith the Heart acts, ſo much ſooner

muſt the Spring of its Fibres be weakened, till it thus be gradually deſtroyed and worn out. But, on the other hand, the larger Circuit the Blood has to go, it muſt proportionably loſe of its Motion in the capillary Veſſels, which may occaſion the Parts to attract in the ſlow Courſe of the Blood; many of its Particles muſt form different *Moleculæ* in the Veſſels, which to break, diſſolve, and mix again with the Blood, requires a greater Strength; and this becomes a new ſuperadded Work for the Heart, Lungs, and Muſcles: And beſides, from this ſlow Circulation, and this Increaſe of the Body's Circumference, ſtill more Fat muſt be ſeparated, and laid up in the Veſſels that contain the Oil; whereby the Body's Dimenſions are enlarged, the Compreſſion of the Veſſels increaſed, the Elaſticity of the Fibres daily more weakened, their Coheſion leſſened, the Fibres conſtituting the Membranes more ſeparated, the Force of the Solids impaired, and the Cavity of the Thorax diminiſhed by the prodigious Quantity of Fat accumulated at the Baſe of the Heart, and

Trunks of the great Veſſels: The Space for the Trunks to play in will be leſſened, the Quantity of Air taken in the Lungs be decreaſed, the Blood-Veſſels of the Lungs be inſufficiently compreſſed, and their contained Blood not fully broken, nor its Parts mixed, nor the Heart's Motion retarded.

How indifferently then, and often perniciouſly, do ſuch act, who have made themſelves Victims to Luxury and Appetite? How unbecoming is ſuch a Practice to an intelligent Mind?

From this Chain of reaſoning we are let into the Reaſons why ſome corpulent People are more obnoxious to the Gout and Arthritick Pains: Becauſe,

1. Their Blood has ſo great a Circumference to go, that, when it arrives near the Surface of the extreme Parts of the Body, its projectile Force is become ſo exceeding weak, that Power is wanting to propel the perſpirable Matter thro' the Ducts and excretory Veſſels of the miliary Glands; therefore muſt it ſtick in the imperceptible Cells of the Fibres of the Nerves; and, having ſtill new Mat-

ter thruſt upon it, it forms larger Bodies than the ſmall exquiſitely ſenſible Tubes can eaſily contain, without being ſtretched, prick'd and pain'd.

2. The Fibres being too much upon the Stretch, and their Coheſions with one another leſſened, both by the great Quantity of Fat, and the Overlubrication of the Parts therewith, the Force of the Solids is diminiſhed, wherewith they ſhould break and propel the Fluids, and eliminate the uſeleſs perſpirable Matter ſticking in the Ducts. This likewiſe gives us the Reaſon, why corpulent People, after a merry drinking Bout, may expect a ſorry Time, and why immoderate Venery, or Study, ſhould procure the ſame Diſeaſe; for the firſt of theſe overfills the Veſſels, puts them upon the Stretch, weakens their elaſtick Forces, and renders the Circulation ſlower in the ſmall Veſſels; therefore corpulent People, when very drunk, become livid in the Face, the Blood's Motion being ſo exceeding ſlow from the great Diſtenſion of the Veſſels and Fibres, that 'tis next to Stagnation; nay, ſometimes it does really

ſtagnate, and kill the wretched Creature. Hence enſue preternatural Coheſions and *Moleculæ*, which, getting into the Tubes of the extreme Veſſels, occaſion violent Pains.

Immoderate Venery, by its frequent Convulſions, wears out and debilitates the Spring of the Fibres, and ſuddenly expels the uſefulleſt Part of the Fluids, while the groſſer Parts remain behind, which the muſcular and veſicular Force cannot break, before it reaches the Extremities of the Body. The Solids alſo, after they have been wound up to the higheſt Spring in every venereal Coitus, preſently fall back, relax, and become more paſſive than before, and continue ſo a conſiderable time, thro' the Loſs of the nervous Juice expelled in the Convulſion of the Solids, and the ſlow Secretion of that valuable Liquor in the Brain, becauſe of the Thickneſs of the Blood, the Weakneſs of the Heart, and ſmall Force of the vaſcular Tubes. This is the Reaſon why Youth ſpent in profuſe Venery, either has its old Age prevented by Death, thro' an early Breach of the Ballance of Nature, or Depreſſions of the Solids below the Force neceſſary for Preſervation of Life; or, if the Solids be naturally robuſt, yet will their Strength be ſo impaired even in Manhood, as to expoſe the Body to Gout, Gravel, and Arthritick Pains. This Argument carried a little further will let us into the Secret, why the Children begot after ſuch a wild laſcivious Courſe of Youth, aretortured with the hereditary Diſeaſes of the Gout and Gravel. Aſſiduous Study exhauſts the animal Spirits, (the more is the pity) deprives the Fibres of the nervous Juices, and neceſſary Supplies, weakens them, and diminiſhes Evacuations, and diſturbs and changes the Secretions.

3. The Parts of the Blood not being duly mixed, but having groſſer Parts in it than formerly, when the Solids acted with a full and equal Reſiſtance to its Force, a greater Strength is requiſite to propel it, and expel the excrementitious Parts; which ſuperadded Task the Fibres are now ſo incapable to diſcharge, that their natural Strength is impaired in pro-

portion to the Greatneſs of the Body's Corpulency.

Thoſe who underſtand this rational Way of arguing, may ſee, from theſe Conſiderations, what are the beſt and ſafeſt Methods to be taken with a Patient, both for his Health and the Phyſician's Credit, and why gentle Evacuations, as Bleeding, Vomiting, and Laxatives, will be of ſpecial Service, when the gentle Symptoms of Inappetency, Indigeſtion, Rawneſs of the Stomach, *&c.* firſt ſeize the Patient; and why all ſtrong Evacuations after the Seizure of the Fit muſt be highly injurious, and the Effects of the greateſt Ignorance: And alſo, why after the Diſtemper has taken its Place in the Extremes, (if we will be medling) we ſhould invite it thither by emollient and relaxing outward Applications mixed with Anodynes, giving inwardly at the ſame Time rich Wines with Alexipharmicks and Aromaticks; and why, after the Matter is come down, and the Parts become very red or ſwelled, we are to promote a copious Perſpiration in the Place: For, to attempt Diſcuſſions

cuſſions at that time by Evacuations, and outward Applications of Coolers and Aſtringents, is to abuſe our Senſes, to act contrary to Reaſon, and to uſe our Skill to turn Nature's preſervative and curative Efforts into a mortal Diſtemper.

Give me leave here to add further, that a ſudden Change from either of theſe Habits of Body (*viz.* either from a lean to a very fat, or from a corpulent to a meagre) can never be without Danger. Moreover, this is the true Reaſon, why old People of a ſudden ſeeming to renew Youth, turning full in the Body, and more beautiful than formerly, is almoſt a certain Sign of Death ſhortly to enſue, or of ſome long and grievous Illneſs to come upon them; becauſe their formerly contracted Veſſels are again expanded, and filled with a greater Quantity of Fluids, than the preſent Age and Conſtitution of Body can bear, eſpecially ſeeing ſtill new Blood is added in greater Quantity than the former is prepared; for in old Age the Evacuation is mightily impaired, and can neither be ſupplied by one, nor all of the ſenſible Evacuations.

And not only lean Perſons becoming ſuddenly fat, but weak Bodies quickly growing ſtronger, of a lovelier Countenance and better Colour, may juſtly expect their Health to be in Danger; for they, whoſe Bodies perſpire plentifully, are indeed weaker, but healthier: When this Evacuation is diminiſhed, before they fall ſick they become much ſtronger, by reaſon of the daily Increaſe of Fluids which remain in the Capillaries from the accuſtomed Degree of Perſpiration, whereby the Elaſticity of the Fibres does alſo firſt increaſe, till from that great Diſtenſion, the Ballance of Nature (that is, the Æquilibrium betwixt the Solids and Fluids) be overcome, and they loſe their Spring and Vigour.

Thus, by producing an extreme Degree of a good Habit, preſent Danger enſues: For the largeſt Quantity of this *Plethora* lies in the Capillaries, eſpecially in thoſe where a larger Quantity uſed to be congeſted and carried off, *viz.* under the Skin; for, ſuppoſe the Body contains 85

Pounds of Blood, (by Blood I underſtand here the whole Fluids in a living Body, becauſe they are all ſeparated from the Blood) perhaps the large, the ſecond and third-Rate Veſſels contain not above 25 Pounds, then the minute Veſſels which conſtitute the fleſhy Parts and delicate Membranes, may be loaded with 60 Pounds, and more, of nutritive Juices.

These Conſiderations teach us to what Diſeaſes ſuch Conſtitutions are chiefly liable, and of what Illneſs they will moſt probably die, and alſo how their Death might ſometimes be prevented. The ſame Thread of reaſoning leads us to know, why Perſons lately corpulent, but ſpeedily and unaccountably turning lean and meagre, may ſhortly expect to pay the Debt of Nature, and by what Illneſs. I could eaſily here be particular in theſe Things, but it would increaſe the Bulk of this Diſcourſe to no purpoſe; for ſuch as underſtand the animal OEconomy, and are capable of reaſoning from ſelf-evident Principles, cannot be ignorant of, nor need thus to be told theſe Things: And as for others, however they may officiouſly and impertinently intrude themſelves, 'tis plain neither God nor Nature ever deſigned or called them to the Medical Profeſſion; therefore ſuch as underſtand not theſe ſhort Hints, would not be much bettered were I to make a diſtinct Explication.

Neither are Diminution or Obſtruction of Motion, Walking and Action, Dropſies, Gravel, Gout, and Arthritick Pains, always the Effects of Corpulency, tho they be ſufficient to deter a wiſe and virtuous Man from ſuch Courſes, as ſubject his Body and Conſtitution to the mercy of theſe cruel Diſeaſes: But they are alſo liable to Apoplexies, from the Sizyneſs and pituitous ſluggiſh Nature of the whole Maſs of Blood, and from the Incapacity of ſuch a Maſs to paſs the incredibly ſmall Meanders of the Brain, and ſo to afford ſufficient nervous Juice: Hence the making of animal Spirits is hindered, as well as the Flux of the few that are ſeparated out of the Brain into the Organs of the Senſes and voluntary Motions; and hence alſo the hindrance of the Return of others from theſe Organs into the common Senſory; for theſe nervous Pipes are ſo compreſſed externally by a Heap of Fat, and the Coats of the Pipes themſelves are ſo relaxed, that they want Force to propel their contained Fluid backwards to the Brain, or forwards to the Muſcles: Hence all cold, pale People, (Cold being the Effect of a ſlow Circulation, and that of a weak, lax Fibre) catarrhous and leucophlegmatick Conſtitutions are more liable to theſe Diſeaſes than others. This Diſeaſe is eaſily foreſeen in corpulent People, if they ſuddenly become dull, ſlow, lazy, idle, ſleepy, and more inactive than formerly: For the ſame Reaſon they are alſo more liable to Carus's and Lethargies, as alſo to Palſies, from the Incapacity of the Nerves to let the animal Spirits paſs them, and the Unfitneſs of the Blood to paſs the Brain for their Separation. Likewiſe corpulent People are more liable to Polypus's in the Heart, the great Artery, and all the ſanguiferous Veſſels; and therefore to Palpitations, Swoonings, and Faintings: They are alſo obnoxious to an exceeding Shortneſs of Breath, from the

Breaſt being ſtuffed with Fat, to frequent Looſeneſs and Diarrhœas; they can bear no great Evacuations, neither by bleeding, vomiting, purging, nor ſweating. Corpulent Women are often barren, and, as *Hippocrates* obſerves, are ſeldom long liv'd, the Reaſon whereof I have ſufficiently given above.

* * *

CHAP. VI.

Shewing the Cauſe of ſeemingly contrary Indiſpoſitions in Perſons of a corpulent Habit of Body.

ANOTHER Thing not improper to be enquired into on this Subject, is, That, ſeeing the Inconveniencies to which corpulent People are liable, ſeem of ſo different a Nature, from whence ariſe ſuch contrary Indiſpoſitions in ſundry Perſons, tho they be of the ſame Habit of Body? To account for this, we muſt conſider the various Conſtitution of their Fibres; ſome having naturally more ſtiff, elaſtick, and better connected Fibres, others laxer, leſs coherent, and more dilatable: The Symptoms of both which, give me leave to ſpeak to a little, and to their Effects, and how to be treated; whereby every Man will eaſily ſee the Texture of his own Fibres, and to what Diſeaſes his Body is naturally moſt diſpoſed. Perſons of very elaſtick Fibres are generally lean, dry, perſpire much, are of a blackiſh, dark, or ſwarthy Colour, are naturally impatient, prone to Action, have ſtrong, hard, large, and unyielding Mſucles, clean and firm Bodies; ſuch are ſubject to inflammatory Diſeaſes, as Pleuriſies, Peripneumonies, Squinzies, Phrenſys, and Fevers, eſpecially in the Spring and Summer; and in dry Seaſons to dry Aſthmas, great Pains, Convulſions, Cramps, Watchings, Madneſs, ſuppreſſing of the female Evacuations, Polypus's of the Veſſels, &c. The Strength of this Conſtitution is abated, by diminiſhing the ſtrong Force and Elaſticity of the Solids, relaxing their Parts, widening their Veſſels, making way for the free and ready Acceſs of the Fluids, and increaſing their Reſiſtance againſt the Solids. And all this is done by leſſening the Quantity of the Blood, and pouring into it Plenty of thin, ſoftning Liquors, (the chief whereof is warm Water) ſoft, light, inſipid, oily Medicines, ſmall Doſes of Opiates often repeated, warm emollient Fomentations, and Baths, living in a cool and moiſt Air, uſing thin and watry Meat and Drink, by Idleneſs, long and ſound Sleep, Eaſineſs or Indifference of Mind, and in ſhort, whatever, moiſtens, ſoftens, dilutes, reſolves and cleanſes. Such who have weak Fibres, and lax Veſſels, have commonly ſmall thin Hair, and ſometimes very fair, and flaxen coloured, by reaſon of its Poroſity; their Muſcles are ſmall, ſoft, yielding and looſe; their Skin is fair, blanched or white; they are of cold Conſtitutions, their Extremities are often cold, and they are apt to catch Cold on the ſlighteſt Occaſion; they have frequent Purgings or Sweatings; they are fat, corpulent and phlegmatick; their Solids are flabby, and ſoaked in Humidities; they are frequently lazy, indolent and dull, and ſubject to many chronical Diſeaſes, as Palſy, Catarrhs, Evacuations, Want of Appetite, bad Digeſtion, Apoplexy, Lethargy,

thargy, and all the ſleepy Diſtempers, Abortions, immoderate *Lochia*, and *Menſes*, *Fluor albus*, nervous Conſumptions, Atrophys, œdematous and ſcrophulous Swellings, Diabetes, Incontinency of Urine, involuntary Tears, Deafneſs from a Relaxation of the Membrane of the Drum of the Ear; Dropſies of the Head, Breaſt, Belly, and whole Body; Blindneſs thro' a Relaxation of the *Retina* in old People; Falling down of the Neck of the Womb and Fundament, with many other Maladies, moſt whereof are chronical or of long Continuance, from this one fruitful Spring, *viz.* weak and lax Fibres and Veſſels: All which are cured by ſimple and earthy Aliments, almoſt of the ſame Nature, before they be taken into the Stomach, with thoſe Juices that are in a ſound Body, as Eggs, Panados, rough Wines; by auſtere and acid Medicines given, Friction with a Fleſh-Bruſh or coarſe Cloth, Exerciſe, eſpecially Riding, the cold Bath, Labour, and whatſoever Means will invigorate, and ſtiffen the Solids, and bring them to an Æquilibrium or juſt Ballance with the Fluids, and raiſe and encreaſe the Tone and Elaſticity of the Fibres. But neither of theſe Methods muſt be continued too long, or after their deſired Effect is produced, leſt,

> *Dum vitant ſtulti Vitia, in Contraria currunt:*

And ſo the Patient,

> *Incidat in Scyllam, cupiens vitare Charybdim.*

One Way whereby we may be able to gueſs at the Fluidity of the Blood, or Indilatability of the Solids, is from the different Degrees of the Body's length betwixt lying down in the Evening and riſing in the Morning; which I am ready to believe is not wholly owing to the Repletion of the interoſſeous Cartilages with Fluids, but rather to a Dilatability of the Fibres, and their Interſtices in the ſpongeous Parts of the Bones themſelves, from a Repletion of their Veſſels (which convey Nutrition to them) when the Body lies ſo long in a horizontal Poſture, and paralytick State during Sleep, and the Bones are freed from the Preſſure of the Body's Weight, which they ſuſtain, when 'tis in a perpendicular Poſition: And this Difference of Stature I have ſometimes tried, and found it to vary in ſeveral Perſons of the ſame Age, Sex, Climate, and Way of Life; for lean, blackiſh, ſwarthy, brown-coloured, or hard-muſcled Perſons, have meaſured half an Inch ſhort in the Morning, of what fair, fine complexioned, or white, pale People have meaſured; I mean the laſt have exceeded the others Increaſe of Stature ſo much after the Night's Reſt. This Difference ariſes in the healthy State, from a Dilatability and Indilatability of the Fibres of different Perſons. But then I have obſerved a very ſenſible Alteration of this Morning Increaſe in the ſame Perſon, it being conſiderably larger in a healthy than in a ſickly State.

Theſe Diſeaſes are occaſioned by a great Viſcidity of Blood: And I particularly obſerved this in two Patients labouring under quotidian Agues; for, as the animal Juices recovered their natural Fluidity, and the Fibres their true Elaſticity, *i. e.* as the Diſtemper went off, the Body's Length increaſed daily every Morning,

ing, till it returned to its natural Size when in Health. Obſervations in other Diſeaſes may not perhaps be wholly uſeleſs in Practice.

But to return to the Query it ſelf; the ſeemingly contrary Indiſpoſitions in different Perſons of the ſame corpulent Habit, appear to owe their Riſe to a different Conſtitution of the Fibres, or different Rarity or Denſity of the Membranes of the Body: For ſuch whoſe Solids are laxeſt, and their Veſſels the weakeſt over the whole Body, will be more eaſily ſubject to Leucophlegmacys, Corpulency and Dropſies: Such Bodies are ſo naturally diſpoſed to Corpulency, that nothing but Temperance, great Exerciſe, and much terreſterious Food, can prevent their growing large, and becoming a heavy Load to themſelves. On the contrary, in ſuch whoſe Bodies are endued with more elaſtick Solids and ſtiff Fibres, the Accumulation of ſuperfluous and pernicious Juices is prevented, not only near the Centre of the Body, but upon the whole Surface of it; that is, not only where the Blood has but ſhort Courſe from the Heart, till it returns again to its Fountain, but where the Courſe is far, and the Stretch long, the Diviſions and Sub-diviſions of the Veſſels many: For when the Blood's Velocity is retarded by ſo many Angles, Circumvolutions and Windings, thro' the Capillaries which are ſo very minute and numerous, then it is that either the Blood Veſſels diſtend and inflame, or the nervous Juice and Lymphaticks congeſt, ſuch as are at the Extremes of the Legs, Feet, Arms, and Hands: This occaſions Goutiſh, Arthritick, or Rheumatick Pains, œdematous and dropſical Swellings of the Parts. Now the Velocity of the Blood is always in Proportion to the Branches or Ramifications gone off from the great Artery. And the common Proportion which Dr. *Keil*, after many Obſervations and Experiments, found to obtain between the Sections of the common Trunk and the Sum of the Sections of its Branches, was nearly that of $\frac{100}{124}$; from which Suppoſition, if we deſire to know the relative Velocity of the Blood at the 30th Diviſion, the Logarithm of $\frac{100}{124}$ is 9,9065783; which multiplied by 30, the number of

Diviſion, it gives 7,1973490, to which the Number anſwering in the Tables is 0,001575; and conſequently the Velocity at the Heart is to the Velocity at the 30th Diviſion, as 1 to 0,001575, *i. e.* as 1000000 to 1575, or as 635 to 1: And therefore, if the Blood in the *Aorta* moves 55 Feet, or 660 Inches in a Minute, it will at the 30th Diviſion move little more than an Inch at the ſame Time; and at the 40th Diviſion the Diminution of Velocity will be as 5456 to 1; and at the 50th as 46882 to 1; and at the 100th Diviſion it will be very near as 2200000000 to 1. This will hold true, if the Sections are augmented thro' all the Diviſions of the Arteries conſtantly in the ſame *Ratio* of 124 to 100: But perhaps a leſs *Ratio* than this may take Place in the ſmall complicated Arteries, and conſequently the Diminution of the Velocity may not be ſo great as this Propoſition ſuppoſes, tho the number of Diviſions and Complications may be much greater: However, the Propoſition ſerves to ſhew (which is what I intended to do) that, if the Circulation of the Blood near the Surface of the extreme Parts be very ſlow, when the Circulation is weak, ſlow, and languid in the great Veſſels, how prodigiouſly muſt it be after ſo many Ramifications and Diviſions as happen betwixt the Heart and the Surface of the Legs and the Feet? No Wonder then that we find Gouty, Arthritical, and Dropſical Diſeaſes ſo often in theſe Parts, in Perſons of a cold Conſtitution, or lax Fibres and weak Veſſels; nay rather, what a Wonder is it that 'tis not always ſo with ſuch People? How eaſy is it for theſe Diſeaſes to overtake the ſluggiſh, luxurious and corpulent? How ſtrange is it that either they ſhould live ſo long, or that any of them ſhould be without theſe and other Diſtempers.

But what I mean by different Conſtitutions, is no other than various Motions of the Blood in different Perſons: And the Cauſe of this Diverſity of the Blood's Motion, or different Conſtitution, is not ſo much owing to the Quantity and Size of the moving Fibres, as to their Strength and Vigour, and conſequently to their Pulſe and Tone; neither does it depend on the Subſtance and State of the Blood, or the Plenty of the Veſſels, their Largeneſs or Condition, but rather on the hereditary Diſpoſition, Age, Sex, Climate and Air, which variouſly affect and alter the Temperament of Humours; and the Contraction of the Fibres, and the Strength and Habit of the Veſſels do ſo vary the Blood's Motion, that 'tis never one and the ſame in the ſame Man at all the Seaſons of the Year, with all ſorts of Diet, and in every Climate.

From Conſtitutions in general, I ſhall lay down ſome Signs of a healthy State and long Life: But to come to the Knowledge of theſe, we muſt gather our Obſervations as far back as the Womb; nay, as the Act of *Coitus*, wherein we were begotten.

1. Perſons muſt be generated of healthy, vigorous Parents, that are come to full Age, who have rarely uſed Venery; but when they ſet to it, did it with Heat, Strength, full Deſire, and in the Morning, after ſound Sleep, perfect Digeſtion, eſpecially in the Spring of the Year.

2. The Sperm ejected muſt not be ſpumous, watry, inſipid, ſcanty, or poor, but ſtrong, retained ſome time, brought to its utmoſt Perfection in the ſeminal Bladders by the Exhalation of the ſerous Part, and by a Retention and Congeſtion of the more viſcous, odoriferons and lively.

3. The *Uterus* and *Ovaria* muſt be fitted and diſpoſed for the Reception of it, and for the Inflammation, Tumefaction, Separation, and Dropping off of the *Ova* into the Fallopian Tubes, which muſt be open, and give a free and undiſturbed Paſſage to the *Ovum* thro' theſe Tubes into the Womb; and that the Womb be fit for the Reception and Nutrition of this Stranger.

4. 'Tis neceſſary that the pregnant Mother be ſound, uſe herſelf to Labour or Exerciſe; that ſhe have her Paſſions under the Government of Reaſon, and enjoy a quiet Mind, that ſhe have only one Fœtus in her Womb at a time, that ſhe may afford Plenty of good wholeſom Nouriſhment.

5. That ſhe do not bring forth the Child till nine full Months after Conception,

and

and that it come into the World at a proper Time, eſpecially in Winter.

6. That the Child's Growth after its Birth be ſlow, and proportionable in every part, ſtill increaſing in Subſtance and Strength together, till he be above twenty five Years old.

7. The Habit and Shape of his Body muſt be broad, the Breaſt large, broad or ſquare, the Belly light and ſmall; the Shoulders, Arms, Thighs and Legs ſtrong, muſcular and hairy; the Scull large and capacious, eſpecially the hinder Head; his Skin hard, Body fleſhy, but not corpulent or groſs; his Colour blackiſh, ſwarthy, or brown.

8. His Blood muſt be florid but thick, which when let out, and ſtanding a little time, becomes fibrous and ſtrong, and will readily coagulate into a hard Subſtance; the other Humours ſhould be plentiful and rough, moderately hot, leſs oily and ſoft.

9. Reſpiration muſt be ſlow, large, full, eaſy, even, with the leaſt viſible Alteration of the Organs of the Lungs.

10. The Pulſe of the Artery muſt anſwer the breathing, be ſlow, large, full, equal, ſtrong, conſtant, or ſteady, not diſpoſed to change from ſlight Cauſes.

11. His Provocation to Stool muſt be ſlow, and the Fæces voided of a good Conſiſtence, without Inconvenience to the Body.

12. His Urine little, but well digeſted.

13. His Perſpiration free, ſo as to have frequent gentle Sweats.

14. He muſt have a good Appetite, and that ſucceeded by a good and perfect Digeſtion.

15. He muſt follow moderate Labour, neither be lazy, idle, nor very vehement in Exerciſe or Work.

16. He ſhould be of a Genius not too bright, and a Judgment not too penetrating or profound.

17. There muſt be few violent Motions of Body or Mind, but a Conſtancy amidſt accidental Changes and Alterations.

Where all theſe Signs concur, that Perſon has the beſt Proſpect of good Health and long Life, if withal he obſerves the Rules of Temperance and Moderation.

CHAP. VII.

Of the Cure of Corpulency.

THE laſt Head I propoſed to ſpeak to on this Subject, was, What Means were proper to prevent or remove a troubleſome, overgrown, and corpulent Habit of Body, and reduce it to a better and healthier State: And here I ſhall not meddle with the Pharmaceutical part, or that which belongs to Medicine; this ſmall Treatiſe not being intended for Gentlemen of that Profeſſion, but for others in general. I ſhall therefore content my ſelf with directing only to the Uſe of ſuch of the Nonnaturals, as ſhall be proper for that State of Body which I think may be termed morbid.

1. Make choice of a clear, ſerene Air to live in, upon a dry, ſandy, riſing Ground, not bordering on Marſhes, Fens,

Ponds, or ſtagnant Waters; at a Diſtance from Cities, woodland Countries, and Furnaces where Minerals are melted or refined.

2. Uſe Exerciſe and Labour, which may mix, digeſt, and ſeparate the Juices of the Body, cleanſe the Inſides of the vaſt number of Pipes and Strainers whereof the Body is compoſed, and which may give the Solids a firm and laſting Tone, whereby they may caſt the Humours into their reſpective Canals, and throw off ſuperfluous Juices and Redundances, and aſſiſt Nature in her ſecret and neceſſary Diſtributions. Theſe Motions and Agitations of the Body by Exerciſe clear the Underſtanding, keep the Imagination undiſturbed, exalt to the higheſt Pitch, and greateſt Perfection thoſe Spirits requiſite for the proper Exertion of our intellectual Faculties. And of all other Exerciſes, that of Riding is the moſt conducive to Health, and accommodated to our Bodies, and gives us the beſt and wholeſomeſt Agitations and Shocks. And tho ſome plead that Riding conduces to the fattening of the Body, even to Corpulency,

lency; I anſwer, that tho Riding ſeldom and gently, with an ambling Motion, may have ſome Tendency to it, yet frequent and vigorous Exerciſe this way will ſo help to prepare the Blood for running over its Strainers, and for caſting off thoſe Redundances, which occaſion Corpulency, that the wholeſom, nutritious Juice will remain in Plenty, and yet that briſk Tone wherewith the Solids are invigorated, will prevent Congeſtion and Accumulation of ſuperfluous Matter.

Nature has indicated to us the Neceſſity and Excellency of Exerciſe.

(1.) From the proper Make of the Body for it, *viz.* the Activity and Pliableneſs of the Parts to it.

(2.) From the general Deſire which all young Animals have for it, their daily Practice, and the Gratification of thoſe Deſires, by leaping, running, dancing and playing.

(3.) From the Poverty and Miſery which Inactivity, Lazineſs, and Idleneſs produce; and from the great Things which Activity, Diligence, and Exerciſe procure,

cure, as Food, Clothes, Honour, Riches, Liberty and Peace.

(4.) From the black and long Catalogue of violent and chronical Diſeaſes, both of Body and Mind, which are the natural Attendants of Sloth, Lazineſs, and Indolence, and prove ſo many Judgments overtaking the negligent Wretch, and puniſhing his ſtupid Sloth; ſo that Mr. *Dryden* might well ſay,

The firſt Phyſicians by Debauch were made,
Exceſs began, and Sloth ſuſtain'd the Trade:
By Chaſe our long-liv'd Fathers earn'd their Food,
Toil ſtrung the Nerves, and purified the Blood:
Better to hunt in Fields for Health unbought,
Than fee the Doctor for a nauſeous Draught.
The wiſe for Cure on Exerciſe depend;
God never made his Work for Man to mend.

3. Their Diet ſhould be moderate, ſpare, and of the more detergent kind, as Bread of Oats, Rye, or Barley; their Meat of the leſs nutritious ſort, as Fiſh, but not Shell-fiſh, for that feeds very much, and is hard to be digeſted and eliminated out of the Body, for which reaſon 'tis of ſpecial Service in Conſumptions. Fowl, &c. Veal, Pork, Bacon, Lamb and Mutton are the richeſt, *i. e.* afford moſt Nouriſhment; Fowl has leſs than the others, but Fiſh leaſt of all; Beef is very ſtrengthening, but then it requires longer time to go off the Stomach, and a ſmaller Quantity will ſupply the Demands of Nature. A Diet of Herbs is very ſerviceable here, for they afford leſs Nouriſhment than either Bread or Meat, and yet give the Stomach and Body more Trouble to digeſt them. Abſtinence now and then is alſo very adviſable.

4. Such as are afraid of Corpulency ſhould refrain mild and ſmooth Liquors, as mild Ale, or ſoft, balſamick Wines; and ſhould uſe ſuch Wines as have an Acidity, Tartneſs, or Sharpneſs in them, and theſe too very thin, as Rheniſh,

White Port, Wines lowered with Water, or Water a little acidulated with Vinegar, or Juice of Lemons. Stale Ale or Beer quietly ſtimulates the Fibres, invigorates the Solids, promotes Digeſtion and Perſpiration; and by the Uſe of this Method I have known ſome loſe two Stone of Fat in one Week's Time: But this haſty Change is wholly unadviſeable, being of more dangerous Conſequence than that State they make ſuch precipitant Haſte to get out of.

5. Let Sleep be ſhort, juſt enough to ſerve for Digeſtion and Nutrition, not to further a great Relaxation, and not a Dilatability of the Fibres, and occaſion a too plentiful Secretion of nervous Juice and nutritive Parts: 'Tis alſo good to reſt on a Bed not too ſoft or warm, for that relaxes ſtill more, and diminiſhes the Tone of the Fibres.

6. The elevating Paſſions onght not to be too much indulged; and tho the depreſſing Paſſions, ſuch as Sorrow, Grief, &c. as well as thoſe that wind up the Tone of the Fibres too high, as violent Anger, and ſudden Fright; I ſay, tho they tend

to depauperate the Body when they are indulged, yet we ought to guard againſt them; for the Cure is worſe than the Diſeaſe.

7. All thoſe Things which promote inſenſible Perſpiration; as (1.) Bitters and Aromaticks, to wit, Gentian, Orange-peel, Camomile-flowers, Wormwood, Myrrh, Creſſes, *&c.* which by their gentle Warmth give a Tenſity to the Fibres of the Body, and cauſe a moſt inſenſible *Diaphoreſis.* And hence 'tis that ſome People cannot endure the Uſe of Bitters, becauſe they occaſion ſuch a vaſt Diſſipation of the Fluids thro' the Skin, that they are parched with a moſt intolerable Thirſt.

(2.) Such Things as by their Stimulancy of the Solids corrugate and draw them up into a greater Tenſion and Stiffneſs, and ſo act with the fuller and freer Force over the Fluids, and prevent their Redundances and Coheſions; ſuch are Vinegar, Tartar, Nitre, Sea-ſalt, but above all Vinegar of Squills.

(3.) Such Things as fuſe and rarifie the Blood by the Subtility and Solidity of their Parts, and ſo prepare it for paſſing eaſily over its ſecretory Ducts, and ſend off its Superfluity by the Skin, as a continued Diet of the Woods, *viz. Guaiacum, Saſſafras, Juniper, Sarſaparilla*, &c.

(4.) By the Uſe of Flannel Shirts; theſe are exceedingly injurious to weak People, whoſe Tranſpiration is generally too profuſe: For, ſeeing Perſpiration doubles all the ſenſible Evacuations, and is to the Diſcharge by Stool as 40 to 4, *i. e.* ten Times greater; then it will follow, that a Man will not be more weakened by having ten Times as many Stools as he uſed to have, than he will be by only having Perſpiration double what it was before. We are ſatisfied that the greater Part of our Stools is only the groſſer Part of our Food, which could not enter the Mouth of the Lacteals; for the bilious and pancreatick Juices, together with the glandular Liquor excreted from the Inteſtines, ſcarce make above $\frac{1}{10}$ of what is voided by Stool: Wherefore there is as much drained from the Blood in one Day by Perſpiration, as is ejected by Stool in a hundred: Therefore if the Uſe of

Flannel double the Quantity of ejected perſpirable Matter, it will certainly reduce the Perſon as much as if he had diſcharged a hundred Times his uſual and healthy Quantity by Stool in the ſame ſpace of Time. 'Tis certain that exceſſive Purging, or a Diabetes, weakens the ſtrongeſt Conſtitution, and reduces the moſt corpulent Habits; and if ſo, why not an increaſed Perſpiration?

(5.) The cold Bath wonderfully promotes this Deſign of extenuating the Body;

1. By its great Preſſure upon our Bodies, whereby it ſtraitens the Veſſels, and ſo diſſolves the Humours, and prepares them for Filtration by the Glands, and propels the viſcid Matter which furred up the Veſſels; hence the Fluids move more freely and eaſily: And from the Preſſure on the Surface of the Body, and ſtraitning of the Veſſels, more Blood muſt repair to the Brain, and occaſion a more plentiful Secretion of nervous Juices; whereby the Solids will be more invigorated, their Tone increaſed, and all the Secretions promoted. Now this

Preſſure of Water added to the Air muſt be very conſiderable, and accompliſh ſome great Ends. Dr. *Wainwright* proves, that, when the Mercury ſtands higheſt in the Barometer, our Bodies (ſuppoſing the Surface of the Skin equal to 15 Square Feet) are preſſed upon by a Weight of Air equal to 39900 Pounds Troy. Now ſuppoſe a Body 35 Feet under Water, it ſuſtains double that Preſſure it did in the Air, *i. e.* 79800 Pounds Troy Weight, (for *Galilæus* diſcover'd by pumping, that the Preſſure of a Pillar of the Atmoſphere is equal to a Cylinder of Water 35 Foot high of the ſame Baſis) but 35 Foot being too deep for bathing, let us only ſuppoſe a Body, whoſe Surface is 15 Square Feet, 2 Feet under Water, then it ſuſtains a Weight of Water added to that of Air equal to 2280 Pound Troy: For 2, the number of cubical Feet of Water, preſſing upon 15 Foot ſquare of the Skin, multipled by 76, the number of Pounds in a cubical Foot of Water, is equal to 152, multiplied by 15, the ſuppoſed number of ſquare Feet on the Surface of the Body, which is equal to 2280 Pound

Troy. Now if the Water bathed in be ſaltiſh, its Preſſure will be conſiderably greater; therefore Immerſion in Sea-water muſt be hurtful to meagre People, unleſs ſome Neceſſity oblige their Compliance with it, as the Bite of ſome mad Animal, or an Atrophy from a relaxed Fibre.

2. Another Thing which renders Bathing of an attenuating Nature, is the Humidity wherewith it relaxes the Body, by inſinuating it ſelf into the Pores of the Skin; but more of this is to be expected from the hot Bath, few Perſons having Reſolution enough to continue in the cold Bath till it have this Effect.

3. Cold Bathing promotes Perſpiration from its Cold, cauſing a Contraction of the Fibres, as well as the Preſſure.

(6.) Friction with a Fleſh-Bruſh, Hair or hard Cloth, will much promote Perſpiration, by rubbing off the Mucus and Duſt on the Surface of the Skin, breaking the groſſer Parts of the Fluids under the Skin, and propelling them forward in the Veſſels.

(7.) Gentle Evacuations are helpful to reduce the Body, therefore corpulent People ſhould always have an open Belly, and uſe gentle Diureticks.

(8.) Laſtly, Smoking of Tobacco, by ſtimulating the Nerves of the Mouth, draws ont much Phlegm from the ſalival Glands, and diminiſhes the Fluids.

Theſe Things put in Practice will not only prevent Corpulency in thoſe who are diſpoſed to it, but reduce very groſs Bodies.

FINIS.

ERRATA.

Page 10. *l.* 22. *for* defend *read* diſtend. *p. ib. l. ult. f.* fiery *r.* ſizey. *p.* 14. *l.* 10, 11. *r.* The Moiſture and Exhalation from Vegetables is very great, for he found, *&c.* *p.* 15. *l.* 8, 9. *r.* And in this Propulſion the Waſte of the Liquor is. *p.* 17. *l.* 8. *f.* Floods *r.* Foods. *p.* 19. *l.* 15, 16. *r.* ſuppoſe the Chyle ſhould be ſtrained off, and get into the Lacteals, yet will it be. *p.* 36. *l. penult. r.* Come ſooner to wrinkled Brows. *p.* 38. *l.* 4. for plaſtick, *r.* elaſtick. *p.* 44. *l.* 2. *f.* Trunks, *r.* Lungs. *p.* 55. *l.* 18. *r.* *Suppreſſions.*